

**CLAIMS**

1 - A method implemented in a computer for automatically matching graphic elements ( $g_i$ ) constituting given graphic chains automatically to phonetic elements ( $p_j$ ) constituting corresponding phonetic chains after initially entering (E1) global transcriptions (CG|CP) of the graphic chains into the phonetic chains into a database accessible by the computer and after estimating and storing (E2) in the database first probabilities ( $P(g_i|p_j)$ ) of elementary transcriptions of graphic elements into respective phonetic elements, characterized by the following steps:

for each transcription of a given graphic chain (CG) with M graphic elements into a corresponding phonetic chain (CP) with N phonetic elements, determining (E3 - E9) second probabilities ( $P(g_1, \dots, g_m|p_1, \dots, p_n)$ ) of MN second transcriptions of M graphic chains successively concatenating the M graphic elements into N phonetic chains successively concatenating the N phonetic elements, each as a function of a respective first probability and of the highest of three respective second probabilities determined beforehand, and

establishing and storing (E10) a link between the last elements ( $g_m, p_n$ ) of the graphic and phonetic chains of each second transcription and the last elements of the graphic and phonetic chains of the transcription relating to the highest of the three respective second probabilities in order for links established in an  $M \times N$  matrix relative to the second probabilities to constitute a single path between last and first pairs of graphic and phonetic elements of the matrix in order to segment the given graphic chain into graphemes corresponding to

respective phonemes segmenting the corresponding phonetic chain and to store the matches between the graphemes and phonemes in the database, the number of graphic elements in a grapheme being identical to the number of phonetic elements in the corresponding phoneme, in order for any new graphic chain to be transcribed automatically into a phonetic chain segmented into phonemes by means of the stored matches.

2 - A method according to claim 1, wherein the respective first probability for the determination (E3 - E9) of a second probability ( $P(g_1, \dots, g_m | p_1, \dots, p_n)$ ) relating to a second transcription of a graphic chain concatenating  $m$  graphic elements into a phonetic chain concatenating  $n$  phonetic elements, with  $1 \leq m \leq M$  and  $1 \leq n \leq N$ , relates to the last elements in the graphic chain with  $m$  graphic elements and the phonetic chain with  $n$  phonetic elements.

3 - A method according to claim 1 or 2, wherein the three respective second probabilities determined beforehand for the second transcription of the graphic chain with  $m$  graphic elements into the phonetic chain with  $n$  phonetic elements respectively relate to a second transcription of a graphic chain with  $m-1$  graphic elements into the phonetic chain with  $n$  phonetic elements, a second transcription of the graphic chain with  $m$  graphic elements into a phonetic chain with  $n-1$  phonetic elements and a second transcription of the graphic chain with  $m-1$  graphic elements into the phonetic chain with  $n-1$  phonetic elements.

4 - A method according to any one of claims 1 to 3,

comprising estimating other first probabilities  $P(g_i|p_j)$  of transcriptions of each of the graphic elements respectively into the phonetic elements as a function in particular of the ranks of the phonetic elements placed in the given phonetic chains (CG) that were segmented into phonemes, in order again to determine second probabilities  $P(g_1, \dots, g_m|p_1, \dots, p_n)$  of  $M \times N$  second transcriptions of each transcription of a given graphic chain with  $M$  graphic elements (CG) into a corresponding phonetic chain (CP) with  $N$  phonetic elements and to establish a corrected path linking the last pair  $(g_m, p_n)$  to the first pair  $(g_1, p_1)$  in a new  $M \times N$  matrix of second probabilities.

5 - A method according to any one of claims 1 to 4, wherein the new graphic chain is being entered on a terminal keyboard and the phonetic chain segmented into phonemes by means of the stored matches is used for orthographic correction of the new graphic chain entered.

6 - A method according to any one of claims 1 to 4, wherein the phonetic chains are phonetically readable by any person who is not an expert in phonetics, and the new graphic chain is automatically transcribed into a phonetic chain segmented into phonemes that can be read by any person who is not an expert in phonetics by means of stored matches to be included in a short message.

7 - A computer program adapted to be executed in a computer for automatically matching graphic elements  $(g_i)$  constituting given graphic chains automatically to phonetic elements  $(p_j)$  constituting corresponding phonetic chains after initially entering (E1) global

transcriptions (CG|CP) of the graphic chains into the phonetic chains into a database accessible by the computer and after estimating and storing (E2) in the database first probabilities ( $P(g_i|p_j)$ ) of elementary  
 5 transcriptions of graphic elements into respective phonetic elements, said program including program instructions which execute the following steps when the program is loaded into and executed in the computer:

for each transcription of a given graphic chain  
 10 (CG) with M graphic elements into a corresponding phonetic chain (CP) with N phonetic elements, determining (E3 - E9) second probabilities ( $P(g_1, \dots, g_m | p_1, \dots, p_n)$ ) of MN second transcriptions of M graphic chains successively concatenating the M graphic elements into N phonetic  
 15 chains successively concatenating the N phonetic elements, each as a function of a respective first probability and of the highest of three respective second probabilities determined beforehand, and

establishing and storing (E10) a link between the  
 20 last elements ( $g_m, p_n$ ) of the graphic and phonetic chains of each second transcription and the last elements of the graphic and phonetic chains of the transcription relating to the highest of the three respective second probabilities in order for links established in an  $M \times N$   
 25 matrix relative to the second probabilities to constitute a single path between last and first pairs of graphic and phonetic elements of the matrix in order to segment the given graphic chain into graphemes corresponding to respective phonemes segmenting the corresponding phonetic  
 30 chain and to store the matches between the graphemes and phonemes in the database, the number of graphic elements in a grapheme being identical to the number of phonetic elements in the corresponding phoneme, in order for any

new graphic chain to be transcribed automatically into a phonetic chain segmented into phonemes by means of the stored matches.